SONY

3-862-016-11(1)

Mini Hi-Fi Component System

Operating Instructions

COMPACT disc DIGITAL AUDIO

MHC-GRX10AV
MHC-RX110AV

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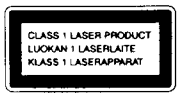
WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

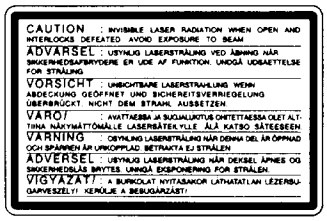
Do not install the appliance in a confined space, such as a bookcase or built-in cabinet.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.



This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

This caution label is located inside the unit.


CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLING.
VORSICHT : UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET UND SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.
VARO! : AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING : OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.
ADVERSEL : USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
VIGYAZAT! : A BURKOLAT NYITÁSAKOR LÁTHATATLAN LÉZERSUGÁRVESZÉLY! KERÜLJE A BESUGÁRZÁST!

NOTICE FOR THE CUSTOMERS IN CANADA

CAUTION:

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

This stereo system is equipped with the Dolby B-type noise reduction system and Dolby Pro Logic Surround decoder*.

* Manufactured under license from Dolby Laboratories Licensing Corporation.

DOLBY, the double-D symbol ⧈ and "PRO LOGIC" are trademarks of Dolby Laboratories Licensing Corporation.

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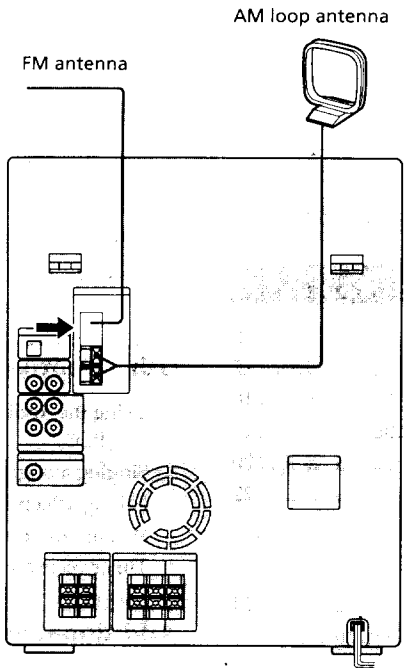
* European model only

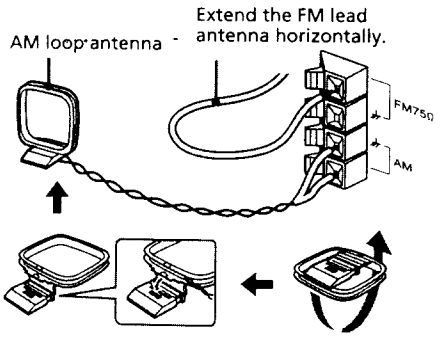
Step 1: Hooking up the main unit



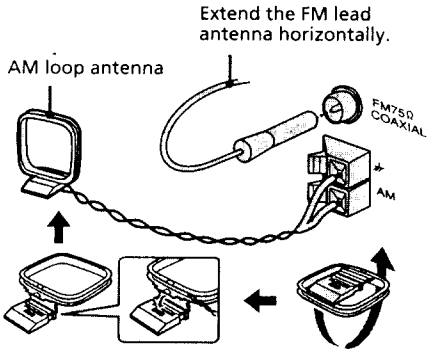
➡ Connect the FM/AM antennas.

Set up the AM loop antenna, then connect it.

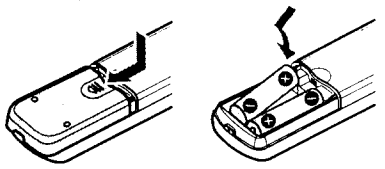
Jack type Ⓐ



Jack type Ⓑ



Inserting two size AA (R6) batteries into the remote



Tip

With normal use, the batteries should last for about six months. When the remote no longer operates the system, replace both batteries with new ones.

Note

If you do not use the remote for a long period of time, remove the batteries to avoid possible damage from battery leakage.

When carrying this system

Do the following to protect the CD mechanism.

1 Press FUNCTION repeatedly until "CD" appears in the display.

2 Hold down LOOP and press I / ⏻ so that "LOCK" appears in the display.

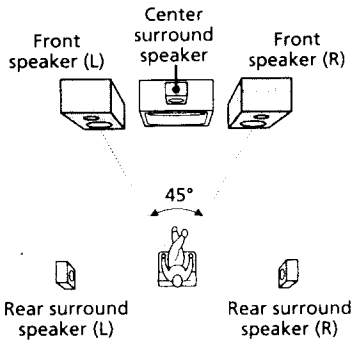
Step 2: Setting up your speakers

Connecting the supplied rear and center surround speakers enables you to fully enjoy Dolby Pro Logic Surround sound. Dolby Pro Logic Surround is a decoding system standardized in TV programs and movies. Dolby Pro Logic Surround improves the sound image by using four separate channels. These channels manipulate the sound to be heard and enhance the action as it happens on the screen.

Positioning the speakers

Before you connect them, determine the best location for your speakers.

1 Place the front speakers at an angle of 45 degrees from your listening position.

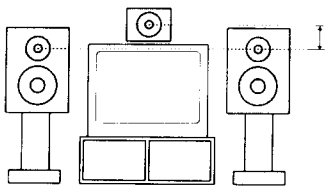


continued

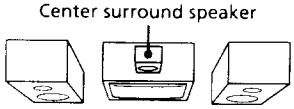
Step 2: Setting up your speakers (continued)

2 Place the center speaker so it is placed about the same height as the front speakers (**A**). Align the center surround speaker with the front speakers or place it slightly back from the position of the front speakers (**B**).

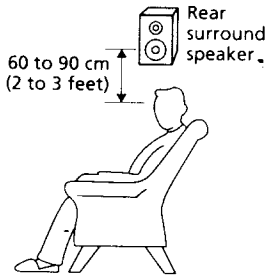
A



B



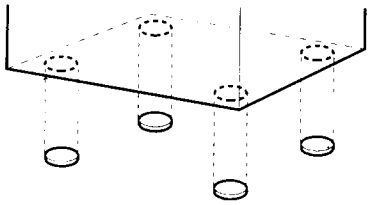
3 Place the rear surround speakers facing each other at about 60 to 90 cm (2 to 3 feet) above your listening position.



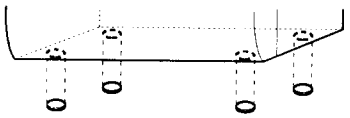
To attach the speaker pads

Attach the supplied speaker pads to the bottom of the speakers to stabilize the speakers and prevent them from slipping.

Front speaker



Center surround speaker



Connecting the speakers

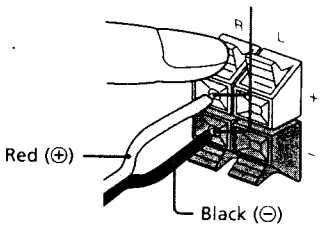
(Refer to illustration at right.)

1 Connect the front speakers.

Connect the speaker cords to the FRONT SPEAKER jacks of the same color.

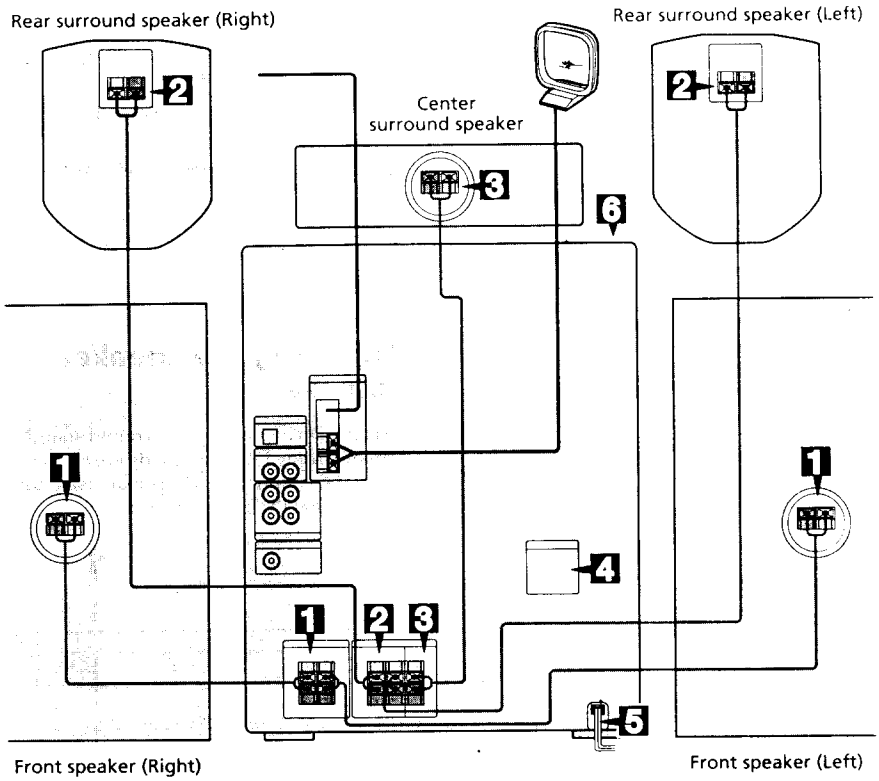
Keep the speaker cords away from the antennas to prevent noise.

Insert only the stripped portion.



Note

The type of speakers supplied vary according to the model you purchased (see "Specifications" on page 53).

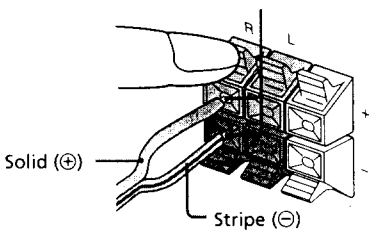


2 Connect the rear surround speakers.

Connect the speaker cords from the rear surround speakers to the appropriate REAR SURROUND SPEAKER jacks. Connect the solid cords to the red jacks and connect the striped cords to the black jacks.

Keep the speaker cords away from the antennas to prevent noise.

Insert only the stripped portion.



Notes

- Do not place the rear surround speakers on top of a TV. This may cause distortion of the colors in the TV screen.
- Be sure to connect both left and right rear surround speakers. Otherwise, the sound will not be heard.

continued

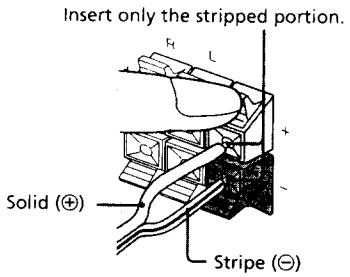
Step 2: Setting up your speakers (continued)

3 Connect the center surround speaker.

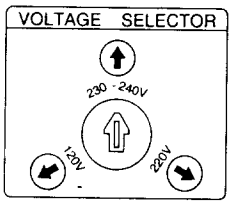
Connect the speaker cords fron the center surround speaker to the appropriate CENTER SURROUND SPEAKER jacks.

Connect the solid cord to the red jacks and connect the striped cord to the black jacks.

Keep the speaker cords away from the antennas to prevent noise.



4 Set VOLTAGE SELECTOR to position of your local power line voltage (for models with a voltage selector).



5 Connect the power cord to a wall outlet.

Demo mode appears in the display.

6 Deactivate the demo mode by pressing DEMO when the system power is turned off.

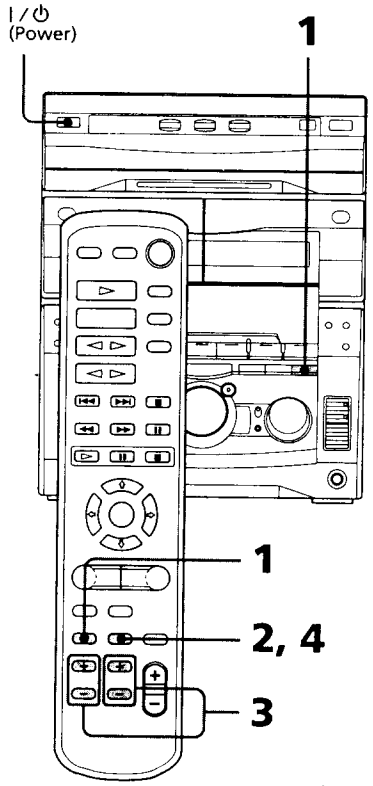
The demo mode is also deactivated when you set the time.

Tip

You can reinforce the bass sound by connecting an optional super woofer to the super woofer connector.

Adjusting the speaker volume

To enjoy Dolby Pro Logic Surround sound, turn the Dolby Pro Logic mode on, then adjust the volume of each speaker using the test tone that the system provides.



1 Press PRO LOGIC (or PRO LOGIC ON/OFF on the remote).
"PRO LOGIC ON" appears.

2 Press T.TONE ON/OFF on the remote.
The test tone is heard from the speakers in the following order. Adjust the volume of the test tone.

Front (left) → Center → Front (right)
↓ Rear ←

3 From your listening position, press CENTER LEVEL (+/–) and REAR LEVEL (+/–) on the remote to adjust the volume.
The volume levels from each speaker must become the same.

4 Press T.TONE ON/OFF when you are done adjusting.
The test tone turns off.

Tip

If you turn VOLUME (or press VOLUME +/– on the remote) all the speaker volumes change.

Note

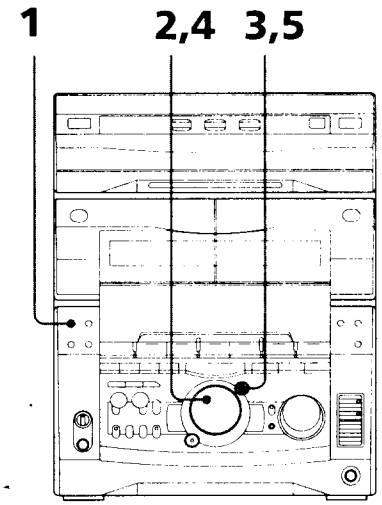
The test tone feature works only for Dolby Pro Logic Surround sound.

Step 3: Setting the time

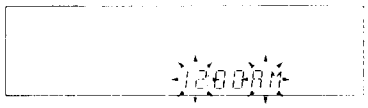
You must set the time before using the timer functions.

The clock is on a 24-hour system for the European and Russian models, and a 12-hour system for other models.

The 12-hour system model is used for illustration purposes.



1 Press CLOCK/TIMER SET.
The hour indication flashes.

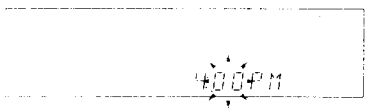


2 Turn the jog dial to set the hour.

continued

Step 3: Setting the time (continued)

3 Press ENTER/NEXT.
The minute indication flashes.



4 Turn the jog dial to set the minute.

5 Press ENTER/NEXT.
The clock starts working.

Tips

- If you've made a mistake, start over from step 1.
- Setting the time deactivates the demo mode. If you want to display the demo mode, press DEMO when the power is off.

Note

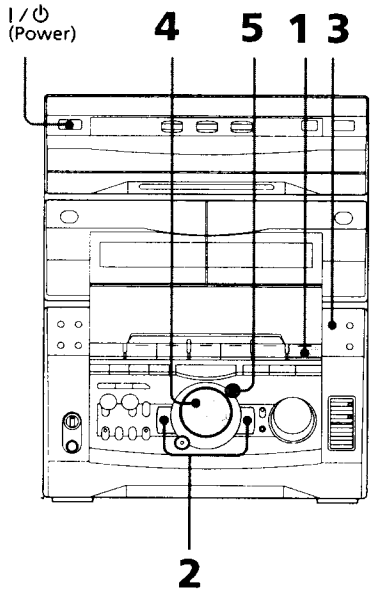
The previous explanation shows you how to set the time while the power is off. To change the time while the power is on, do the following:

1 Press CLOCK/TIMER SET.
2 Turn the jog dial to select SET CLOCK.
3 Press ENTER/NEXT.
4 Perform steps 2 through 5 above.

Step 4: Presetting radio stations

You can preset the following number of stations:

- 2 band model: 20 for FM, 10 for AM.
- 3 band model: 20 for FM, 10 for MW, and 10 for SW (or LW, depending on the model you purchased).
- 4 band model: 20 for FM, 10 for MW, 10 for LW, and 5 for UKV.



1 Press TUNER/BAND repeatedly until the band you want appears in the display.

The bands you can receive vary depending on the model you purchased. Be sure to check which bands you can receive.

Every time you press this button, the band changes as follows:

2 band model:

FM ⟷ AM

3 band model:

FM → MW → SW

or

FM → MW → LW

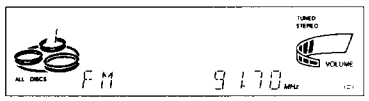
4 band model:

FM → MW → LW → UKV*

* "STEREO PLUS" is displayed when you select UKV.

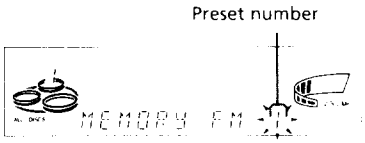
2 Press and hold + or – until the frequency indication starts to change, then release.

Scanning stops when the system tunes in a station. "TUNED" and "STEREO" (for a stereo program) appear.



3 Press TUNER MEMORY.

A preset number appears in the display.



4 Turn the jog dial to select the preset number you want.

5 Press ENTER/NEXT.

The station is stored.

6 Repeat steps 1 to 5 to store other stations.

To tune in a station with a weak signal

Press + or – repeatedly in step 2 to tune in the station manually.

To change the preset number

Start over from step 1.

To change the AM tuning interval (Except for the European, Russian and Middle Eastern models)

The AM tuning interval is factory set to 9 kHz (10 kHz in some areas). To change the AM tuning interval, tune in any AM station first, then turn off the power. While holding down the ENTER/NEXT button, turn the power back on. When you change the interval, AM preset stations will be erased. To reset the interval, repeat the same procedure.

Tip

The preset stations are retained for half a day even if you unplug the power cord or if a power failure occurs.

Connecting optional AV components

To enhance your system, you can connect optional components. Refer to the instructions of each component.

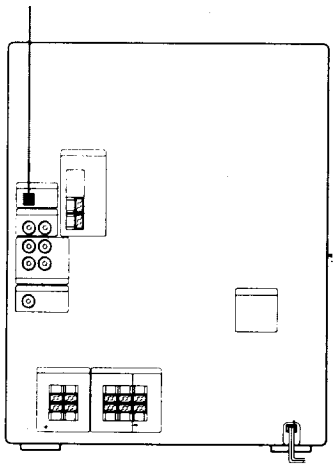
Connecting audio components

Select one of the following two connections, depending on the equipment to be connected and method of connecting.

Connecting an MD deck for digital recording

You can record from CD into the MD deck digitally by connecting an optical cable.

To the DIGITAL IN jack of the MD deck

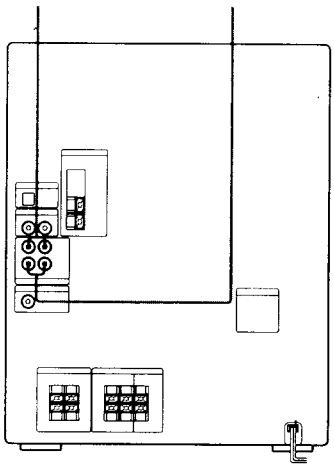


Connecting an MD deck for analog recording

Make sure to match the color of the plugs and the connectors. To listen to the sound of the connected MD deck, press FUNCTION repeatedly until "MD" appears.

To the audio output of the MD deck

To the audio input of the MD deck

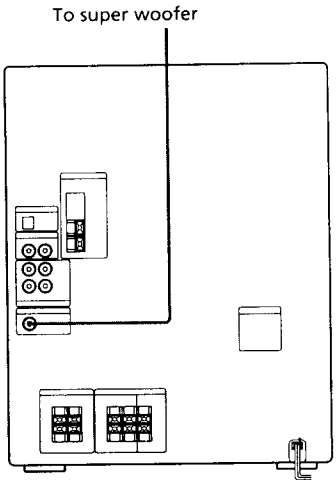


Tip

- When you connect a Sony MD deck, you can use the MD ▷, ❚❚, and ■ buttons on this unit's remote to perform play, pause, and stop operations.

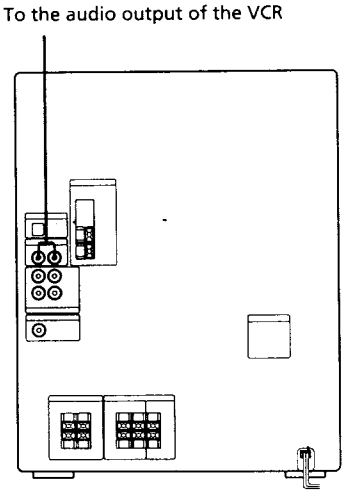
Connecting a super woofer speaker

You can connect an optional super woofer speaker.



Connecting a VCR

Make sure to match the color of the plugs and the connectors. To listen to the sound of the connected VCR, press FUNCTION repeatedly until "VIDEO" appears.



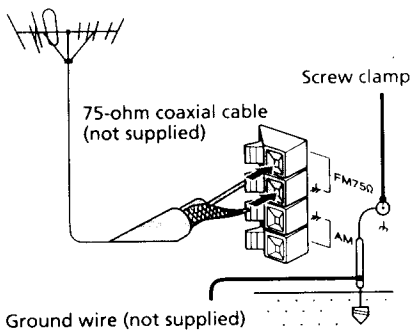
Connecting outdoor antennas

Connect the outdoor antenna to improve the reception.

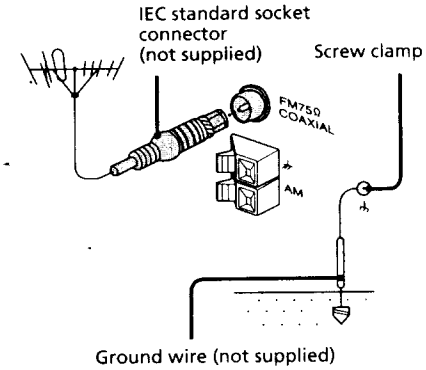
FM antenna

Connect the optional FM outdoor antenna. You can also use the TV antenna instead.

Jack type Ⓐ



Jack type Ⓑ



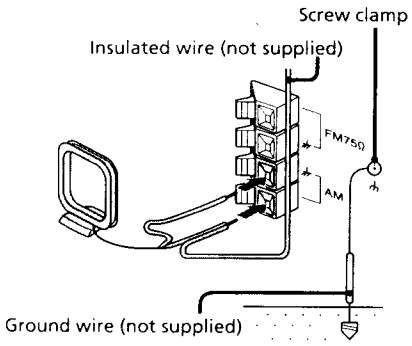
continued

Connecting optional AV components (continued)

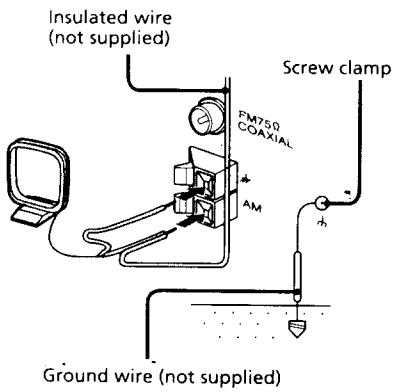
AM antenna

Connect a 6- to 15- meter (20- to 50- feet) insulated wire to the AM antenna terminal. Leave the supplied AM loop antenna connected.

Jack type Ⓐ



Jack type Ⓑ



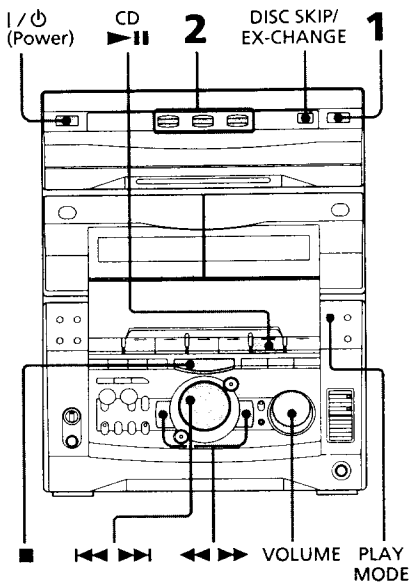
Important

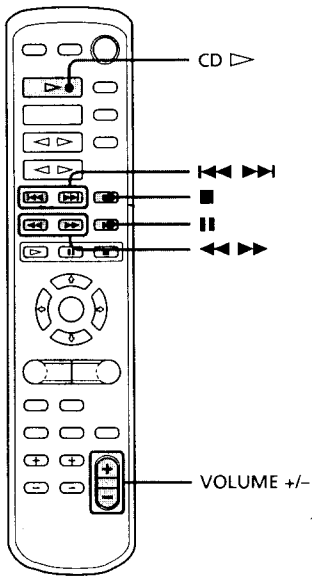
If you connect an outdoor antenna, ground from ⏚ terminal with the screw clamp. To prevent a gas explosion, do not connect the ground wire to a gas pipe.

Playing a CD

— Normal play

You can play up to three CDs in a row.

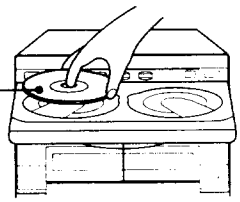




1 Press ⏏ and place up to two CDs on the disc tray.

If a disc is not placed properly it will not be recognized.

With the label side up. When you play a single CD, place it on the inner circle of the tray.

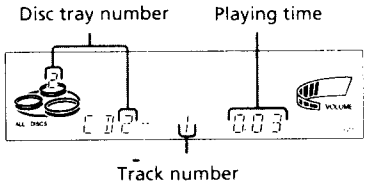


To insert a third disc, press DISC SKIP/ EX-CHANGE to rotate the disc tray.

2 Press one of the DISC 1~3 buttons.

The disc tray closes and play starts.

If you press CD ►II (or CD ▻ on the remote) when the disc tray is closed, play starts from the CD loaded on the tray whose button is lit green.



continued

Playing a CD (continued)

To	Do this
Stop play	Press ■.
Pause	Press CD ►II (II on the remote). Press again to resume play.
Select a track	During play or pause, turn the jog dial clockwise (to go forward) or counterclockwise (to go back) and release it when you reach the desired track. (Or press ►►I (to go forward) or I◄◄ (to go back) on the remote.)
Find a point in a track	Press and hold down ►► or ◄◄ during play and release it at the desired point.
Select a CD in stop mode	Press a DISC 1~3 button or DISC SKIP/EX-CHANGE.
Play only the CD you have selected	Press PLAY MODE repeatedly until "1 DISC" appears.
Play all CDs	Press PLAY MODE repeatedly until "ALL DISCS" appears.
Remove the CD	Press ⏏.
Exchange other CDs while playing	Press DISC SKIP/ EX-CHANGE.
Adjust the volume	Turn VOLUME (or press VOLUME +/– on the remote).

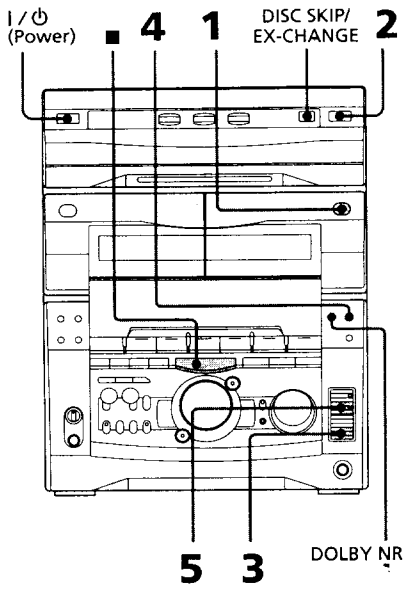
Tips

- Pressing CD ►II when the power is off automatically turns the power on and starts CD playback if there is a CD in the tray (One Touch Play).
- You can switch from another source to the CD player and start playing a CD just by pressing CD ►II or the DISC 1~3 buttons (Automatic Source Selection).
- If there is no CD in the player, "CD NO DISC" appears in the display.
- When a disc tray holding a CD is selected (or playing), the DISC 1~3 button for that tray lights green. When a disc tray holding a CD is not selected, the DISC 1~3 button for that tray lights orange. When all disc trays are empty, the DISC 1~3 buttons all light green.

Recording a CD

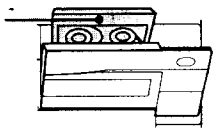
— CD Synchro Recording

The CD SYNC button lets you record from a CD to a tape easily. You can use TYPE I (normal) or TYPE II (CrO_2) tapes. The recording level is adjusted automatically.



1 Press ⏏ and insert a blank tape into deck B.

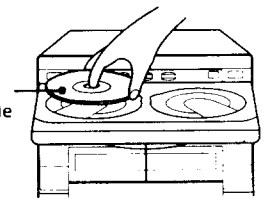
With the side you want to record facing forward



2 Press ⏏ and place a CD.

Then press again to close the disc tray. If the indicator for the tray you want to record is not lit green, press DISC SKIP/ EX-CHANGE repeatedly so that it lights green.

With the label side up. When you play a single CD, place it on the inner circle of the tray.



3 Press CD SYNC.

Deck B stands by for recording and the CD player stands by for playback. The indicator on TAPE B ► (for front side) lights up.

4 Press DIRECTION repeatedly to select ⇄ to record on one side. Select ⇆ (or RELAY) to record on both sides.

5 Press ❚❚ PAUSE.

Recording starts.

To stop recording

Press ■.

Tips

- If you want to record from the reverse side, press TAPE B ◄ to light its indicator after pressing CD SYNC.
- When you record on both sides, be sure to start from the front side. If you start from the reverse side, recording stops at the end of the reverse side.
- When you want to reduce the hiss noise in low-level high-frequency signals, press DOLBY NR so that "DOLBY NR" appears after pressing CD SYNC.

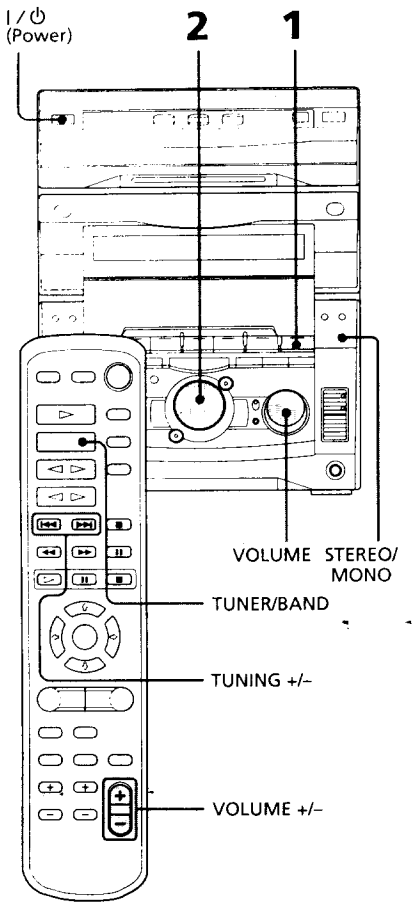
Note

You cannot listen to other sources while recording.

Listening to the radio

— Preset Tuning

Preset radio stations in the tuner's memory first (see "Step 4: Presetting radio stations").



1 Press TUNER/BAND repeatedly until the band you want appears in the display.

The bands you can receive vary depending on the model you purchased. Be sure to check which bands you can receive.

Every time you press the button, the band changes as follows:

2 band model:

FM ⟷ AM

3 band model:

FM → MW → SW

or

FM → MW → LW

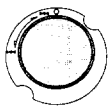
4 band model:

FM → MW → LW → UKV*

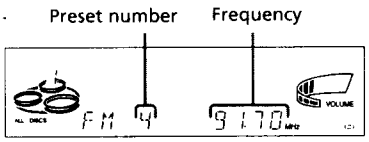
* "STEREO PLUS" is displayed when you select UKV.

2 Turn the jog dial (or press TUNING + or – on the remote) to tune in the desired preset station.

Turn counter-clockwise (or press TUNING – on the remote) for lower preset numbers.



Turn clockwise (or press TUNING + on the remote) for higher preset numbers.



To	Do this
Turn off the radio	Press I / ⏻.
Adjust the volume	Turn VOLUME (or press VOLUME +/– on the remote).

To listen to non-preset radio stations (from front panel only)

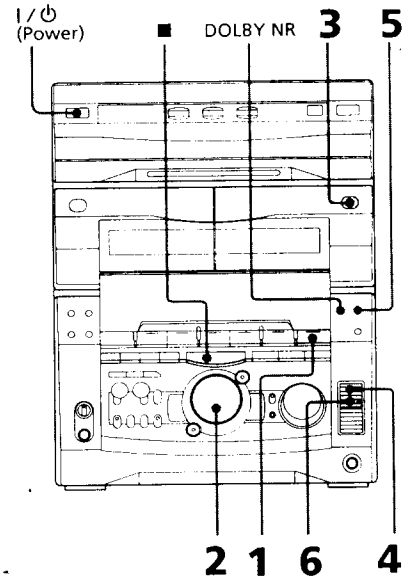
Use manual or automatic tuning in step 2.
For manual tuning, press + or – repeatedly.
For automatic tuning, press and hold + or –.

Tips

- Pressing TUNER/BAND when the power is off automatically turns the power on and tunes to the last received station (One Touch Play).
- You can switch from another source to the radio just by pressing TUNER/BAND (Automatic Source Selection).
- When an FM program is noisy, press STEREO/MONO so that "MONO" appears in the display. There will be no stereo effect, but the reception will improve. Press the button again to restore the stereo effect.
- To improve broadcast reception, reorient the supplied antennas.

Recording from the radio

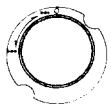
You can record the radio program on a tape by calling up a preset station. You can use TYPE I (normal) or TYPE II (CrO_2) tapes. The recording level is automatically adjusted.



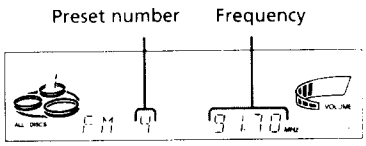
1 Press TUNER/BAND to select the band you want.

2 Turn the jog dial to tune in a preset station.

Turn counter-clockwise for lower preset numbers.



Turn clockwise for higher preset numbers.

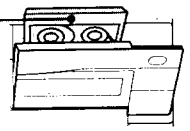


continued

Recording from the radio (continued)

3 Press ⏏ and insert a blank tape into deck B.

With the side you want to record facing forward



4 Press ● REC.
Deck B stands by for recording.

5 Press DIRECTION repeatedly to select ⇄ to record on one side. Select ⇄ (or RELAY) to record on both sides.

6 Press ❚❚ PAUSE.
Recording starts.

To stop recording

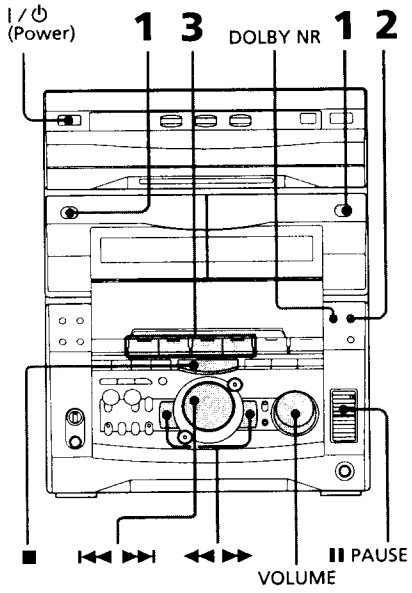
Press ■.

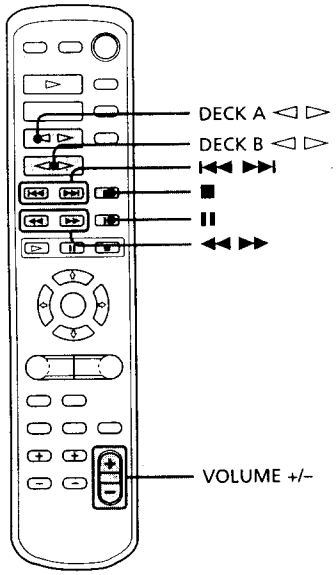
Tips

- If you want to record from the reverse side, press TAPE B ◄ to light its indicator after pressing ● REC.
- When you record on both sides, be sure to start from the front side. If you start from the reverse side, recording stops at the end of the reverse side.
- To record non-preset stations, use + and – in step 2 to tune in the desired station manually.
- When you want to reduce the hiss noise in low-level high-frequency signals, press DOLBY NR so that "DOLBY NR" appears after pressing ● REC.
- If noise is heard while recording from the radio, move the respective antenna to reduce the noise.

Playing a tape

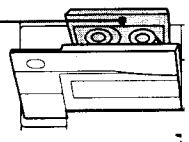
You can use any type of tape, TYPE I (normal), TYPE II (CrO_2) or TYPE IV (metal), since the deck automatically detects the tape type. You can also use the jog dial's AMS* functions to quickly search for songs you want to hear. To select either deck A or B, press DECK A ◁ ▷ or DECK B ◁ ▷ on the remote.





1 Press ⏏ and insert a recorded tape in deck A or B.

With the side you want to play facing forward



2 Press DIRECTION repeatedly to select ⇄ to play one side. Select ⇄* to play both sides.

To play both decks in succession, select RELAY (relay play).**

3 Press TAPE A (or TAPE B) ► (DECK A (or DECK B) ◁ ▷ on the remote).

Press TAPE A (or TAPE B) ◄ to play the reverse side. (Press DECK A (or DECK B) ◁ ▷ again on the remote to play the reverse side.) The tape starts playing.

* The deck stops automatically after repeating the sequence five times.

** Relay play always follows the following sequence:

Deck A (front side), Deck A (reverse side), Deck B (front side), Deck B (reverse side).

To	Do this
Stop play	Press ■.
Pause	Press II PAUSE. Press again to resume play.
Fast-forward	Press ◀◀ or ▶▶.
Rewind	Press ◀◀ or ▶▶.
Remove the cassette	Press ⏏.
Adjust the volume	Turn VOLUME (or press VOLUME +/– on the remote).

Tips

- Pressing TAPE A (or TAPE B) ► or ◄ when the power is off automatically turns the power on and starts tape playback if there is a tape in the deck (One Touch Play).
- You can switch from another source to the tape deck just by pressing TAPE A (or TAPE B) ► or ◄ (Automatic Source Selection).
- When you want to reduce the hiss noise in low-level high-frequency signals, press DOLBY NR so that "DOLBY NR" appears.
- When dubbing tapes originally recorded with Dolby NR, the dubbed tape is automatically played with Dolby NR.

continued

Searching for the beginning of a track (AMS*)

During playback, turn the jog dial the same direction as the ◄◄ or ►► indicator to go forward. Turn the opposite direction to go back. (Or press ⏮ or ⏭ on the remote.)

The search direction, + (forward) or – (back), and number of songs being skipped (1~9) appear in the display.

Example: searching forward 2 songs

TAPE A: :+2

* AMS (Automatic Music Sensor)

Notes

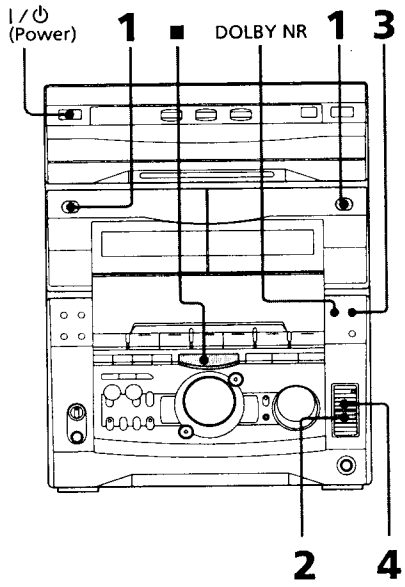
The AMS function may not operate correctly under the following circumstances:

- When the unrecorded space between songs is less than 4 seconds long.
- If completely different information is recorded on the left and right channels.
- When there are continuous sections of extremely low level or low frequency sound (like those of a baritone sax).
- When the unit is placed near a television. (In this case, we recommend moving the unit farther away from the television or turning off the television.)

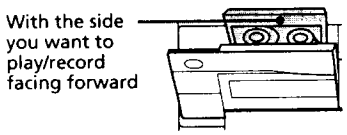
Recording from a tape

— High-speed Dubbing

You can use TYPE I (normal) or TYPE II (CrO_2) tapes. The recording level is automatically adjusted.



1 Press ⏏ and insert a recorded tape in deck A and a blank tape in deck B.



2 Press HI-DUB.

Deck B stands by for recording.

3 Press DIRECTION repeatedly to select ⇄ to record on one side. Select ⇆ (or RELAY) to record on both sides.

4 Press ❚❚ PAUSE.
Dubbing starts.

To stop dubbing

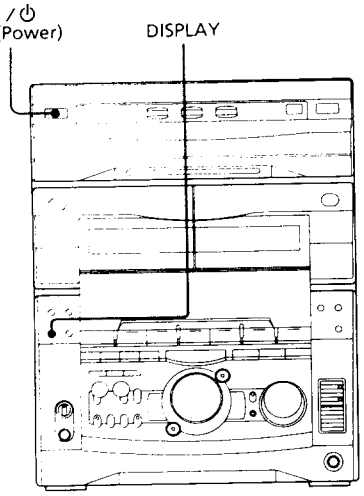
Press ■.

Tips

- When you dub on both sides, start recording from the front side. If you record from the reverse side, recording stops at the end of the reverse side.
- If you set DIRECTION to ⇆ when the tapes you use have different lengths, the tape in each deck reverses independently. If you select RELAY, the tapes in both decks reverse together.
- You don't have to set DOLBY NR, since the tape in deck B is automatically recorded in the same state as the tape in deck A.

Using the CD display

You can check the remaining time of the current track or that of the CD.



➡ Press DISPLAY during playback.

Each time you press the button during normal playback, the display changes as follows:

→ Playing time on the current track
↓
Remaining time on the current track
↓
Remaining time on current CD (1 DISC mode) or
"PLAY" display (ALL DISCS mode)
↓
Clock display (for eight seconds)
↓
Effect (P FILE) name or "EFFECT ON (OFF)"
↓
Name of spectrum analyzer display pattern

To check the total playing time and the number of tracks on a CD

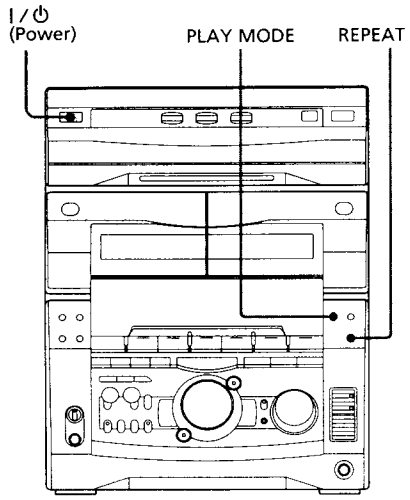
Press DISPLAY in the stop mode.

If you press DISPLAY again, the clock display appears for eight seconds then the display returns to the previous indication.

Playing the CD tracks repeatedly

— Repeat Play

This function lets you repeat a single CD or all CDs in normal play, Shuffle Play and Program Play.



➡ Press REPEAT during playback until "REPEAT" appears in the display.

Repeat Play starts. Do the following procedure to change the repeat mode.

To repeat	Press
All the tracks on the current CD	PLAY MODE repeatedly until "1 DISC" appears in the display.
All the tracks on all CDs	PLAY MODE repeatedly until "ALL DISCS" appears in the display.
Only one track	REPEAT repeatedly until "REPEAT 1" appears in the display while playing the track you want to repeat.

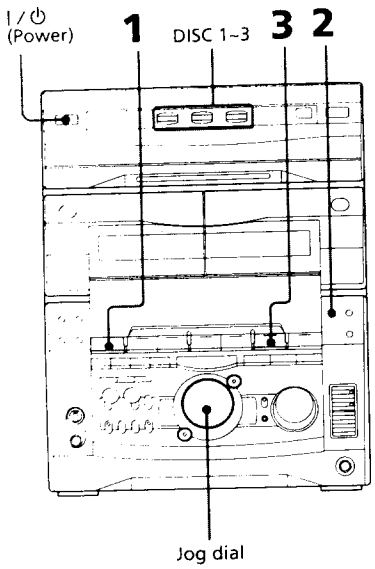
To cancel Repeat Play

Press REPEAT so that "REPEAT" or "REPEAT 1" disappears from the display.

Playing the CD tracks in random order

— Shuffle Play

You can play all the tracks on one CD or all CDs in random order.



1 Press FUNCTION repeatedly until "CD" appears in the display, then place a CD.

2 Press PLAY MODE repeatedly until "1 DISC SHUFFLE " or "ALL DISCS SHUFFLE" appears in the display.
"ALL DISCS" shuffles all the CDs in the player. "1 DISC" shuffles the CD whose DISC indicator is green.

3 Press CD ►II.
"🔀" appears and then all the tracks play in random order.

To cancel Shuffle Play

Press PLAY MODE repeatedly until "SHUFFLE" or "PROGRAM" disappears from the display. The tracks continue playing in their original order.

To select a desired CD

Press DISC 1~3.

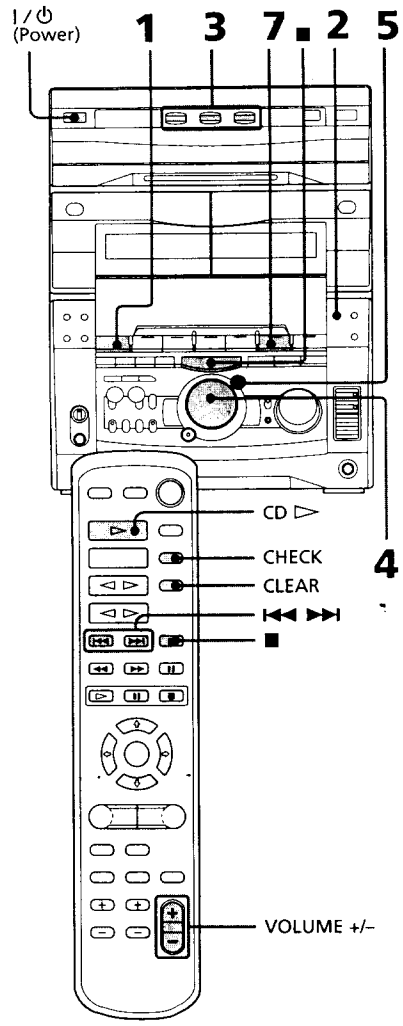
Tips

- You can start Shuffle Play during normal play by pressing PLAY MODE repeatedly to select "SHUFFLE".
- To skip a track, turn the jog dial clockwise (or press ►►I on the remote).

Programming the CD tracks

— Program Play

You can make a program of up to 32 tracks from all the CDs in the order you want them to be played.

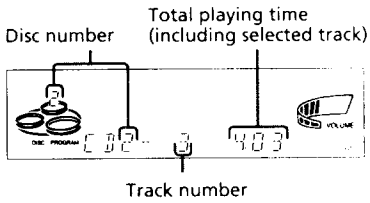


1 Press FUNCTION repeatedly until "CD" appears in the display, then place a CD.

2 Press PLAY MODE repeatedly until "PROGRAM" appears in the display.

3 Press one of the DISC 1~3 buttons to select a CD.

4 Turn the jog dial until the desired track appears in the display.



5 Press ENTER/NEXT.
The track is programmed. The program step number appears, followed by the total playing time.

6 To program additional tracks, repeat steps 3 to 5.
Skip step 3 to select tracks from the same disc.

7 Press CD ►II.
All the tracks play in the order you selected.

continued

Programming the CD tracks (continued)

To cancel Program Play

Press PLAY MODE repeatedly until "PROGRAM" or "SHUFFLE" disappears from the display.

To	Press
Check the program	CHECK on the remote repeatedly. After the last track, "CHECK END" appears.
Clear a track from the end	CLEAR on the remote in stop mode.
Clear a specific track	CHECK on the remote repeatedly until the number of the track to be erased lights up, then press CLEAR.
Add a track to the program	1 Select the disc tray with a DISC 1~3 button. 2 Select the track by turning the jog dial. 3 Press ENTER/NEXT.
Clear the entire program	■ once in stop mode or twice while playing.

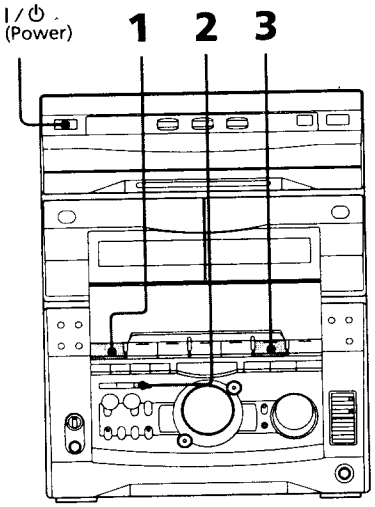
Tips

- The program you made remains in the CD player even after it has been played back. Press CD ►II to play the same program again.
- If "--:--" appears instead of the total playing time during programming, this means:
  - you have programmed a track number which exceeds 20.
  - the total playing time has exceeded 100 minutes.

Playing CDs without interruption

— Non-Stop Play

You can play CDs without pausing between tracks.



1 Press FUNCTION repeatedly until "CD" appears in the display, then place a CD.

2 Press NON-STOP to light the indicator.
"NON-STOP PLAY" appears in the display.

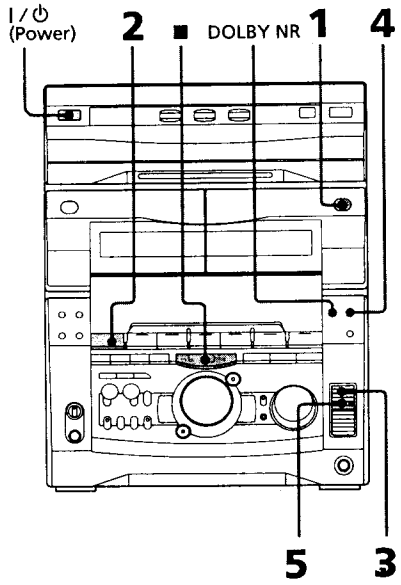
3 Press CD ►II.

To cancel Non-Stop Play

Press NON-STOP so that the indicator goes out and "NON-STOP OFF" appears in the display.

Recording on a tape manually

You can record from CD, tape, or radio as you like. For example, you can record just the songs you want or record from the middle of the tape. The recording level is adjusted automatically.



1 Insert a blank tape into deck B.

2 Press FUNCTION repeatedly until the source you want to record (e.g., CD) appears.

3 Press ● REC.
Deck B stands by for recording. The indicator on TAPE B ► (for front side) lights up.

4 Press DIRECTION repeatedly to select ⇄ to record on one side. Select ⇄ (or RELAY) to record on both sides.

5 Press ❚❚ PAUSE.
Recording starts.

6 Start playing the source to be recorded.

To	Press
Stop recording	■.
Pause recording	❚❚ PAUSE.

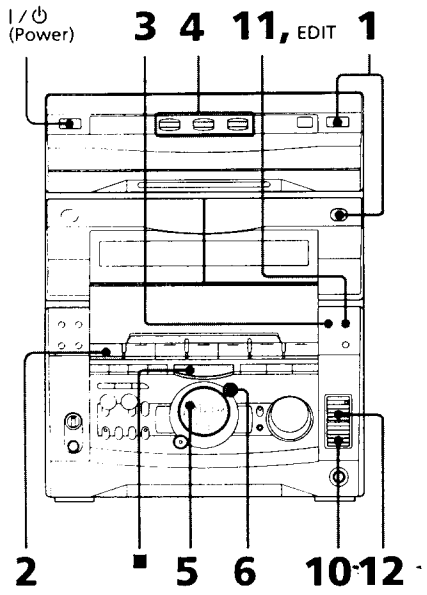
Tips

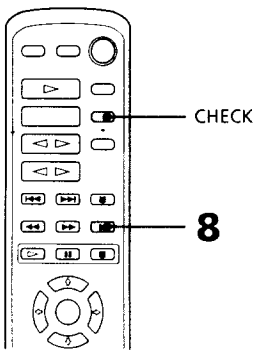
- If you want to record from the reverse side, press TAPE B ◄ to light its indicator after pressing ● REC.
- When you want to reduce the hiss noise in low-level high-frequency signals, press DOLBY NR so that "DOLBY NR" appears after pressing ● REC.
- When recording from a CD, you can use the jog dial to select tracks during rec pause mode (after pressing ● REC in step 3 and before pressing ❚❚ PAUSE in step 5).

Recording a CD by specifying track order

— Program Edit

You can record tracks from all the CDs in the order you want. When programming, make sure the playing times for each side do not exceed the length of one side of the tape.





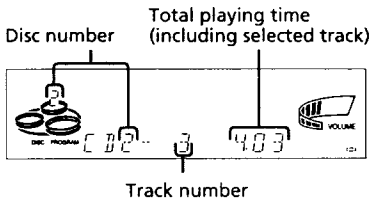
1 Place a CD and insert a blank tape into deck B.

2 Press FUNCTION repeatedly until "CD" appears in the display.

3 Press PLAY MODE repeatedly until "PROGRAM" appears in the display.

4 Press one of the DISC 1~3 buttons to select a CD.

5 Turn the jog dial until the desired track appears in the display.



6 Press ENTER/NEXT.

The track is programmed. The program step number appears, followed by the total playing time.

7 To program additional tracks to be recorded on side A, repeat steps 4 to 6.

Skip step 4 to select tracks from the same disc.

8 Press **II** on the remote to insert a pause at the end of side A.

"P" appears in the display and the total playing time resets to "0.00" in the display.

9 Repeat steps 5 and 6 for tracks from the same disc or steps 4 to 6 for tracks from another disc to program the remaining tracks to be recorded on side B.

10 Press CD SYNC.

Deck B stands by for recording and the CD player stands by for playback. The indicator on TAPE B ► (for front side) lights up.

11 Press DIRECTION repeatedly to select ⇄ to record on one side. Select ⇆ (or RELAY) to record on both sides.

12 Press ❚❚ PAUSE.

Recording starts.

To stop recording

Press ■.

To check the order

Press CHECK on the remote repeatedly. After the last track, "CHECK END" appears.

To cancel Program Edit

Press PLAY MODE repeatedly until "PROGRAM" or "SHUFFLE" disappears from the display.

Tip

When you want to reduce the hiss noise in low-level high-frequency signals, press DOLBY NR so that "DOLBY NR" appears after pressing CD SYNC.

Selecting tape length automatically

—Tape Select Edit

You can check the most suitable tape length for recording a CD. Note that you cannot use Tape Select Edit for discs containing over 20 tracks.

1 Insert a CD.

2 Press FUNCTION repeatedly until "CD" appears in the display.

3 Press EDIT once, so that "EDIT" flashes.

The required tape length for the currently selected CD appears, followed by the total playing time for side A and side B respectively.

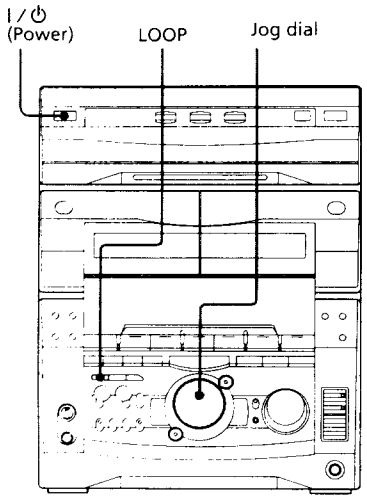
Note

You cannot use this function after programming. In order to use this function, you must first cancel the program by pressing PLAY MODE repeatedly until "PROGRAM" or "SHUFFLE" disappears from the display.

Looping part of a CD

— Loop

With the loop function, you can repeat part of a CD during playback. This lets you create original recordings.



➡ Press and hold LOOP during playback at the point you want to start the Loop function, and release to resume normal play.

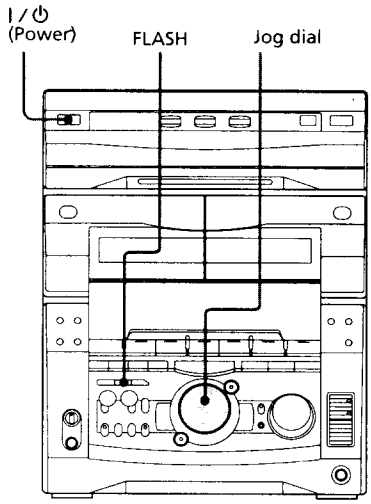
To adjust the loop length

Turn the jog dial while holding LOOP (or press SELECT ↑ or ↓ while holding LOOP on the remote) to select different loop lengths (LOOP 1~20).

Flashing part of a CD

— Flash

With the flash function, you can "flash" the CD sound during playback. This lets you create original recordings.



➡ Press and hold FLASH during playback at the point you want to start the Flash function, and release to resume normal play.

To adjust the flash length

Turn the jog dial while holding FLASH (or press SELECT ↑ or ↓ while holding FLASH on the remote) to select different flash lengths (FLASH 1~20).

To use LOOP and FLASH together

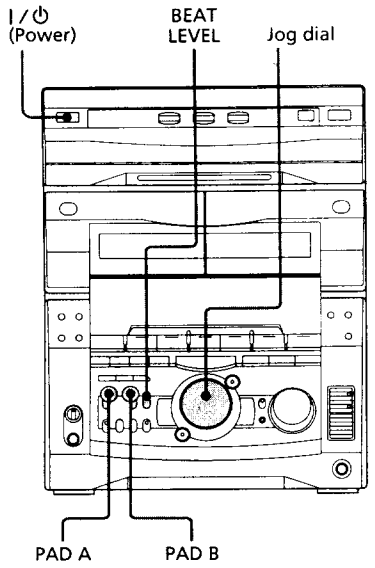
Press and hold both LOOP and FLASH at the same time.

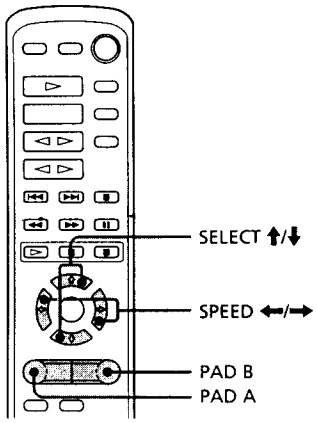
Notes

- The loop and flash length cannot be adjusted during this operation. Adjust the loop and flash lengths independently beforehand if necessary.
- To record the flash effect, use the analog (MD OUT) connections or this unit's tape deck.

Using the drum pads

With the drum pads, you can add percussion during playback. This effect can be used with any source, to create original recordings.

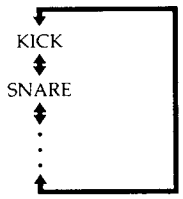




➡ Tap drum PAD A or B to produce the respective sound.

To change the drum sound

Turn the jog dial while holding PAD A or B (or press SELECT ↑ or ↓ while holding PAD A or B on the remote) to select the sound you desire. You can select from a variety of different drum sounds. The name of the drum sound appears in the display.



The sound you select will be stored in pad A or B.

To create a drum roll

Hold down both PAD A and B on the front panel. Turn the jog dial counterclockwise for PAD A or clockwise for PAD B.

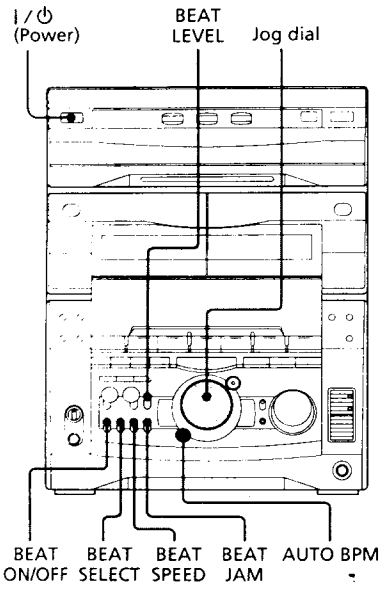
To adjust the volume of the pads

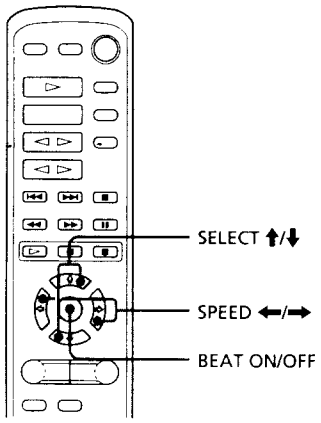
Press BEAT LEVEL repeatedly to select the level you desire. Each time you press the button the level changes as follows:

LEVEL 1 ➡ LEVEL 2 ➡ LEVEL 3 ➡ LEVEL MAX ➡ LEVEL 1 . . .

Using the beat functions

With the beat functions, you can enjoy a variety of rhythms. They can be used with any source, to create original recordings.





➡ Press BEAT ON/OFF during playback at the point you want to start the beat.

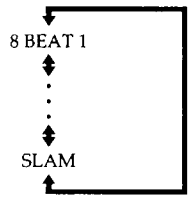
The button's indicator lights up.

To change the speed

Turn the jog dial while holding BEAT SPEED (or press SPEED ← or → on the remote) to select the speed you desire (BPM 60~160).

To change the beat pattern

Turn the jog dial while holding BEAT SELECT (or press SELECT ↑ or ↓ on the remote) to select the pattern you desire. The name of the beat pattern appears in the display.



To cancel the beat

Press BEAT ON/OFF. Make sure the button's indicator turns off.

To change the beat volume

Press BEAT LEVEL repeatedly to select the level you desire. Each time you press the button the level changes as follows:

LEVEL 1 ➡ LEVEL 2 ➡ LEVEL 3 ➡ LEVEL MAX ➡ LEVEL 1 . . .

Tips

- You can use the drum pads and the beat function together.
- Press DEMO while the power is on to hear all drum sounds and beat patterns played repeatedly. Press any (except BEAT LEVEL) key to stop.

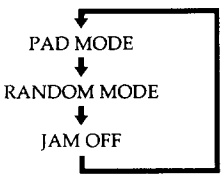
Using the BEAT JAM function

This function automatically synchronizes the sounds of PAD A and B with the sound source.

1 Start playing a source.

2 Press BEAT JAM repeatedly to select the jam mode you desire.

The button's indicator lights up. Every time you press the button, the display changes as follows:



PAD MODE

This mode emphasizes the rhythm of the source by playing the sound stored at PAD A in sync with the bass and playing the sound stored at PAD B in sync with the treble.

RANDOM MODE

This mode emphasizes the rhythm of the source by playing random sounds (from the drum pad library) in sync with source.

Note

BEAT JAM cannot be used at the same time as the BEAT (BEAT ON) function. When BEAT JAM is turned ON, BEAT turns OFF automatically. Likewise, when the BEAT is turned ON, BEAT JAM turns OFF automatically.

Using the AUTO BPM function

This function automatically synchronizes the rhythm of the current beat pattern with the sound source.

1 Start playing a source.

2 Select a beat pattern.

(See "To change the beat pattern" on page 34.)

3 Press BEAT ON/OFF to stop the beat function.

4 Press AUTO BPM.

The button's indicator blinks orange while measuring the source's BPM. Once measured, the indicator lights green.

5 Listen to the sound source and press BEAT ON/OFF at the downbeat.

The rhythm of the beat pattern starts in sync with the source.

Tip

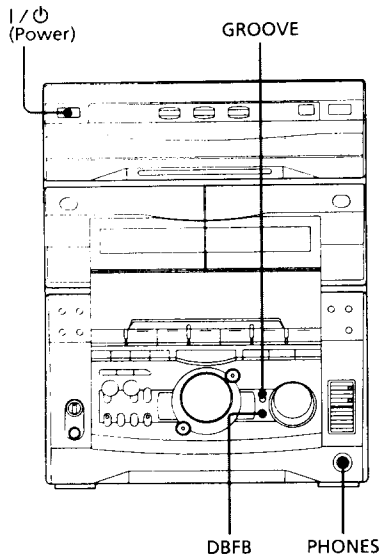
If the downbeat of the rhythm does not match the source, press BEAT ON/OFF to turn the beat off. Then, in time with the source, press BEAT ON/OFF again to restart the beat.

Notes

- AUTO BPM may not work with certain songs (such as those with varying tempos). In such cases, the AUTO BPM indicator continues blinking orange and "AUTO BPM NG" appears in the display.
- The amount of time required to measure a song's BPM (after pressing AUTO BPM) varies for each song.
- AUTO BPM stops automatically when it encounters a blank of (or greater than) 1.5 seconds. It will, however, resume automatically when the music begins again.
- AUTO BPM stops automatically when you turn the jog dial while holding BEAT SPEED.

Adjusting the sound

You can reinforce the bass, create a more powerful sound, and listen with headphones.



To reinforce bass (DBFB)

Press DBFB*.

Every time you press the button, the display changes as follows:

→ DBFB NORMAL (DBFB ▬\\\ )
↓
DBFB HIGH (DBFB ▬\\\\\ )
↓
DBFB OFF (off)

* DBFB = Dynamic Bass Feedback

For a powerful sound (GROOVE)

Press GROOVE. The volume switches to power mode, DBFB is automatically set to full strength, the equalizer curve changes, and the "GROOVE" button lights up. Press GROOVE again to return to the previous volume.

Notes

- With some songs, the music will sound distorted when you use the DBFB system with the graphic equalizer if the bass is too strong. Adjust the bass slowly while listening to music so that you can monitor the effect of the adjustment.
- Cancelling GROOVE sets DBFB to "DBFB ▬\\\ " and flattens the equalizer curve. To cancel the DBFB level, press DBFB until the indication disappears. Adjust the equalization to obtain the effect you desire.

To listen through the headphones

Connect the headphones to PHONES jack. No sound will come from the speakers.

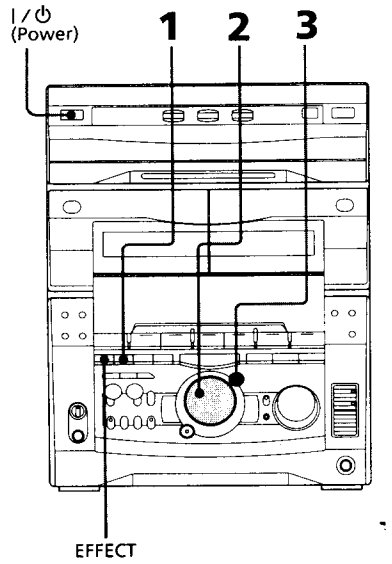
Note

If you have connected a super woofer, please note that sound comes from the super woofer even when the headphones are connected. Turn off the power of the super woofer when using headphones.

Selecting the audio emphasis

The audio emphasis menu lets you select the sound characteristic according to the sound you are listening to.

The personal file function (see "Making a personal audio emphasis file") lets you store your own effects.



1 Press FILE SELECT.
The last effect chosen appears in the display.

2 Use the jog dial to select the preset you desire.
The preset name appears in the display. See the chart "Music menu options".

3 Press ENTER/NEXT.

To cancel the effect

Press EFFECT on the front panel (or the remote) repeatedly so that "EFFECT OFF" appears in the display.

Music menu options

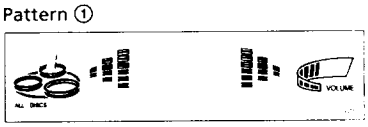
"SUR ▮▮▮▮▮" appears if you select an effect with surround effects.

Effect	For
ROCK POP JAZZ DANCE SOUL	Standard music sources
ACTION ROMANCE SF DRAMA SPORTS	Soundtracks and special listening situations
SHOOTING RACING RPG BATTLE ADVENTURE	Video games
P FILE 1~5	Personal file

To change the spectrum analyzer display

Press DISPLAY repeatedly to select one of the displays below.

Pattern ①



(Changes with music)

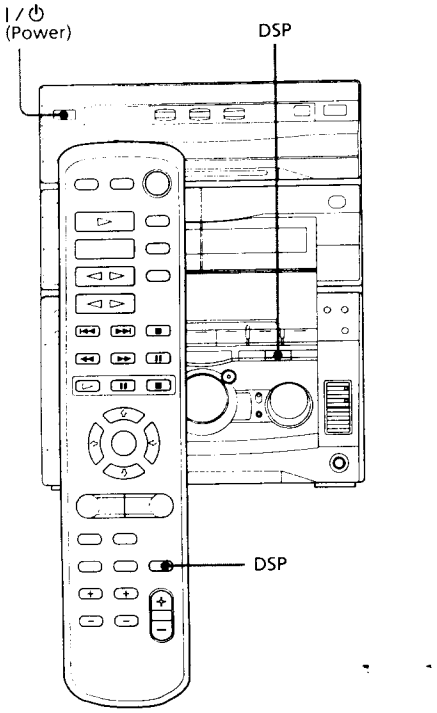
Pattern ②

Note

The spectrum analyzer display changes each time you cycle through the information display (i.e., function → clock → effect).

Selecting surround effects

You can enjoy surround effects.



➡ Press DSP repeatedly to select the surround effect you desire.

SURROUND ON: Reproduces stereo sources in surround sound.

HALL: Reproduces the acoustics of a concert hall.*

THEATER: Reproduces the acoustics of a movie theater.*

ENHANCED THEATER: Reproduces the acoustics of a large movie theater.*

DSP OFF: Turns off the DSP mode.

* The indicator on the front panel's DSP button lights up.

Tip

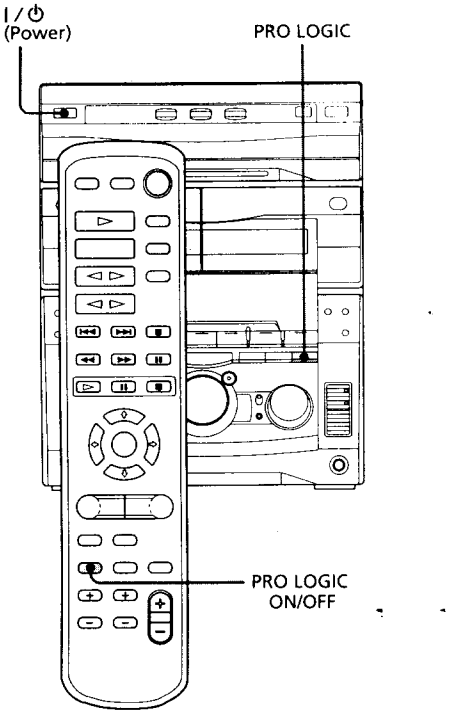
If you want to memorize the effect, store it into a personal file (see "Making a personal audio emphasis file").

Note

When you choose other sound effects, the surround effects will be canceled.

Enjoying Dolby Pro Logic Surround sound

You can enjoy the Dolby Pro Logic Surround sound of videos that are Dolby Surround encoded (DOLBY SURROUND). Complete the setup and adjustments first (see page 5).



➡ Press PRO LOGIC (or PRO LOGIC ON/OFF on the remote) while playing a program source.

The indicator on the front panel's PRO LOGIC button lights up.

To cancel the Dolby Pro Logic Surround sound

Press PRO LOGIC (or PRO LOGIC ON/OFF on the remote) again to turn off the indicator on the front panel's PRO LOGIC button.

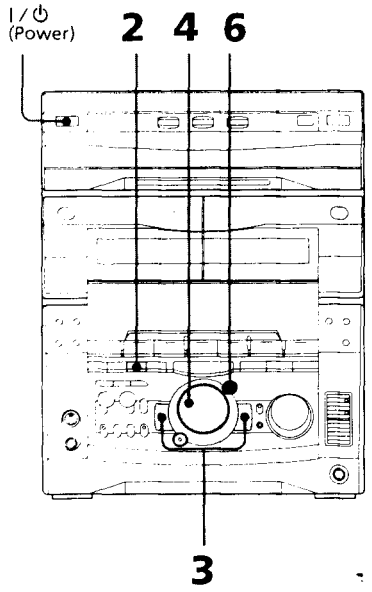
Notes

- You can't use both Dolby Pro Logic Surround sound and the DSP surround effects at the same time.
- When recording the sound, be sure to turn off Dolby Pro Logic Surround sound.

Adjusting the graphic equalizer

You can adjust the sound by raising or lowering the levels of specific frequency ranges.

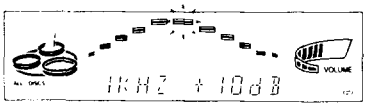
Before operation, first select the audio emphasis you want for your basic sound.



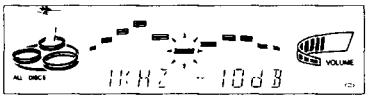
1 Select the audio emphasis you want for your basic sound (see "Selecting the audio emphasis").

2 Press GEQ CONTROL.

3 Press + or – repeatedly to select a frequency band.



4 Turn the jog dial to adjust level.



5 Repeat steps 3 and 4.

6 Press ENTER/NEXT when finished.

Note

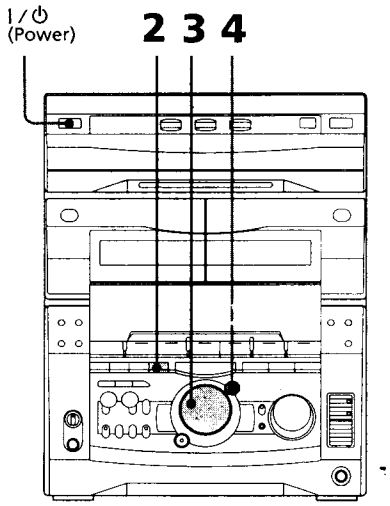
If you choose another menu audio emphasis (other than "EFFECT OFF") the adjusted sound effect is lost. To retain the adjusted sound effect for future use, store it in a personal file. (See "Making a personal audio emphasis file".)

Making a personal audio emphasis file

—Personal file

You can create a personal file of audio patterns (surround effect and graphic equalizer) and store them in the memory of the unit. Later call up an audio pattern to play a favorite tape, CD, or radio program. Create up to five audio files.

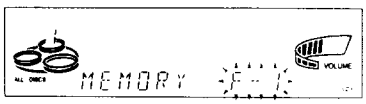
Before operation, first select the audio emphasis you want for your basic sound.



1 Obtain the sound effect you want by using the graphic equalizer and surround effect.

2 Press P FILE MEMORY.

The personal file number appears in the display.



3 Use the jog dial to select the file number (P FILE) where you want to store the sound effect.

4 Press ENTER/NEXT.

The adjusted sound effects are stored under the selected file number. The settings previously stored at this memory location are erased and replaced by the new settings.

To call up the personal file

1 Press FILE SELECT.
2 Use the jog dial to select the personal file you desire.
3 Press ENTER/NEXT.

Using the Radio Data System (RDS)

(For European model only)

What is the Radio Data System?

Radio Data System (RDS) is a broadcasting service that allows radio stations to send additional information along with the regular program signal. This tuner offers convenient RDS features like station name display and location of stations by program type. RDS is available only on FM stations.*

Note

RDS may not work properly if the station you are tuned to is not transmitting the RDS signal properly or if the signal strength is weak.

* Not all FM stations provide RDS service, nor do they provide the same type of services. If you are not familiar with the RDS system, check with your local radio stations for details on RDS services in your area.

Receiving RDS broadcasts

→ Simply select a station from the FM band. When you tune in a station that provides RDS services, the station name appears in the display.

To check the RDS information

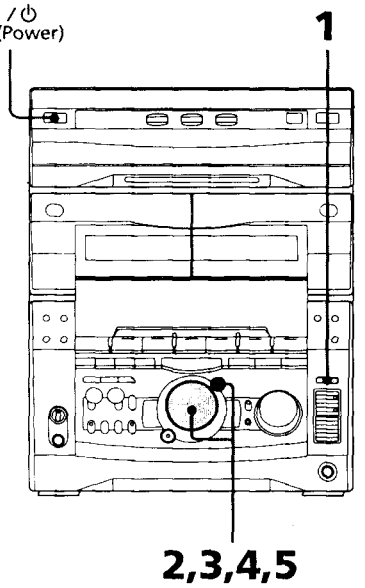
Each time you press DISPLAY, the display changes as follows:

→ Station name*
↓
Frequency
↓
Program type*
↓
Clock display
↓
Effect (P FILE) name or "EFFECT ON (OFF)"

* If the RDS broadcast is not received, the station name and program type may not appear in the display.

Locating a station by program type (PTY)

You can locate a station you want by selecting a program type. The unit tunes in the type of programs currently being broadcast from the RDS stations stored in the tuner's preset memory.



1 Press PTY.

2 Turn jog dial to select the program type you want. See the "List of program types" section below.

3 Press ENTER/NEXT.

The unit starts searching the preset RDS stations ("SEARCH" and the selected program type are shown alternately in the display).

When the tuner receives a program, the preset station number flashes.

4 Turn jog dial to display the preset station number you desire.

5 Press ENTER/NEXT while the preset station number is flashing.

To cancel PTY search

Press PTY again.

List of program types (PTY)

AFFAIRS
Topical programs that expand on current news

ALARM
Emergency broadcasts

CULTURE
Programs about national or regional culture

DRAMA
Radio plays and serials

EDUCATION
Educational programs, such as "how-to" programs and advice

INFORMATION
Programs about consumer affairs, medical advice, and weather

LIGHT MUSIC
Classical music, such as instrumentals, vocal, and choral works

M.O.R. MUSIC
Easy listening (middle of the road music)

NEWS
News programs

OTHER MUSIC
Music, such as jazz, rhythm and blues, and reggae

POP MUSIC
Popular music programs

ROCK MUSIC
Rock music programs

SCIENCE
Programs about the natural sciences

CLASSICS
Performances of major orchestras, chamber music, opera, etc.

SPORT
Sports programs

VARIED
Programs containing celebrity interviews, panel games, and comedy

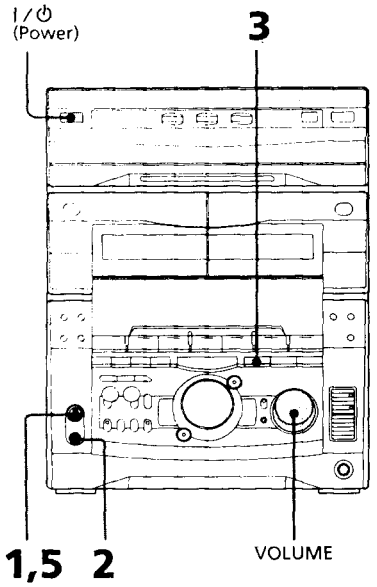
NONE
Any programming not defined above

Note

"NO PTY" appears when the program type that you selected is not currently being broadcast.

Singing along: Karaoke

You can sing along with any stereo CD or tape by turning down the singer's voice. You need to connect an optional microphone.



1 Turn MIC LEVEL to MIN to turn down the microphone control level.

2 Connect an optional microphone to MIX MIC.

3 Press KARAOKE PON/MPX repeatedly to obtain the karaoke effect you desire.

Every time you press the button, the display changes as follows:

KARAOKE PON → MPX R → MPX L
↑— EFFECT OFF (ON) ←—┘

The 🎤 indicator appears in the display when a karaoke mode is activated.

To sing karaoke with decreasing the vocal level of a CD, select "KARAOKE PON". To sing karaoke of multiplex CD or tape, select "MPX R" or "MPX L".

4 Start playing the music and adjust the volume.

5 Adjust the microphone volume by turning MIC LEVEL.

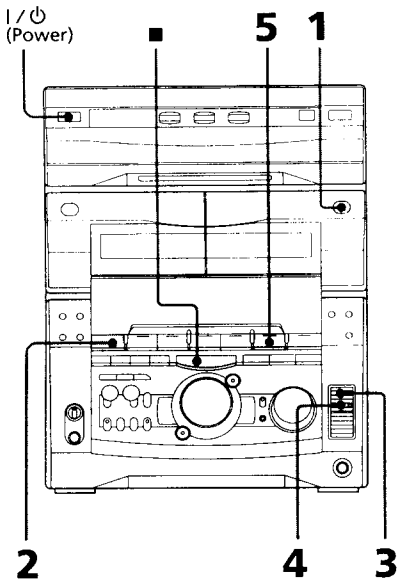
When you are done

Turn MIC LEVEL to MIN and disconnect the microphone from MIX MIC, then press KARAOKE PON/MPX repeatedly so that "🎤" disappears.

Note

With some songs, vocals may not be cancelled when you select "KARAOKE PON".

Mixing and recording sounds



1 Do the above steps 1 to 5. Then, insert a tape in deck B.

2 Press FUNCTION repeatedly to select the source you desire and set it to pause mode.

3 Press ● REC.

4 Press ❚❚ PAUSE.
Recording starts.

5 Press CD ►❚❚ to start playing the CD player (or TAPE A ► for tape deck A).
Playback starts. Start singing along with the music.

To stop recording

Press ■.

Tips

- If acoustic feedback (howling) occurs, move the microphone away from the speakers or change the direction of the microphone.
- If you want to record your voice through the microphone only, you can do so by selecting the CD function and not playing a CD.

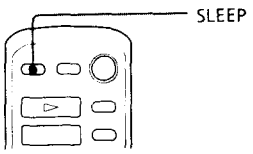
Notes

- If you press EFFECT or recall a sound effect, the karaoke mode is cancelled.
- The instrumental sound may be reduced as well as the singer's voice when the sound is recorded in monaural.
- The singer's voice may not be reduced when:
  - —only a few instruments are playing.
  - —a duet is being played.
  - —the source has strong echoes or chorus.
  - —the singer's voice deviates from the center.
  - —the voice on the source is singing in high soprano or tenor.

Falling asleep to music

— Sleep Timer

You can let the system turn off at the preset time, so you can sleep to the music. You can preset the time to be turned off by 10 minutes.



➡ Press SLEEP.

Every time you press the button, the minute display (the turn-off time) changes as follows:

AUTO → 90min → 80min → 70min → ··· → 10min → OFF → AUTO ···

When you choose "AUTO"

The power turns off when the current CD or tape finishes playback (for up to 100 minutes).

To check the remaining time

Press SLEEP once.

To change the time to turn off

Select the time you want by pressing SLEEP.

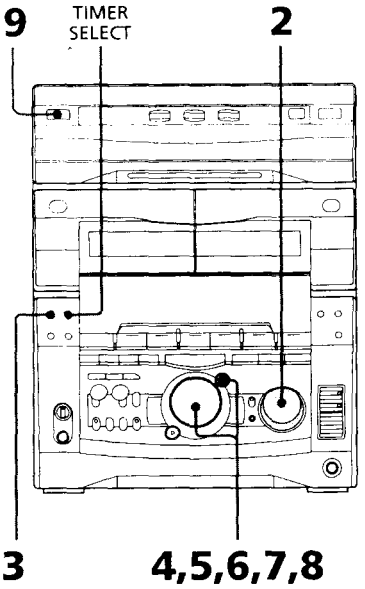
To cancel the Sleep Timer function

Press SLEEP repeatedly until "OFF" appears.

Waking up to music

— Wake-up Timer

You can wake up to music at a preset time every day. Make sure you have set the clock (see "Step 3: Setting the time").



1 Prepare the music source you want to play.

- CD: Insert a CD. To start from a specific track, make a program (see "Programming the CD tracks").
- Tape: Insert an tape with the side you want to play facing forward.
- Radio: Tune in the preset station you want (see "Step 4: Presetting radio stations").

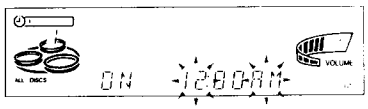
2 Adjust the volume.

3 Press CLOCK/TIMER SET.

"SET (DAILY 1)" appears.

4 Turn jog dial to select DAILY 1 or 2, then press ENTER/NEXT.

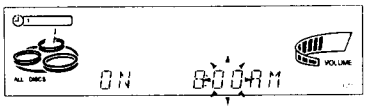
"ON" appears and the hour digits flash in the display.



5 Set the time to start playback.

Turn jog dial to set the hour, then press ENTER/NEXT.

The minute indication starts flashing.



Turn jog dial to set the minute, then press ENTER/NEXT.

The hour indication flashes again.

6 Set the time to stop playback following the above procedure.

7 Turn jog dial until the music source you want appears.

The indications change as follows:

TUNER ⟷ CD PLAY ⟷ TAPE PLAY

8 Press ENTER/NEXT.

The type of timer (DAILY 1 or DAILY 2), followed by the start time, stop time and the music source, appears, then the original display appears.

9 Turn off the power.

To check the setting

Press TIMER SELECT and turn the jog dial to select the respective mode (DAILY 1 or DAILY 2), then press ENTER/NEXT.

To change the setting, start over from step 1.

To cancel the timer operation

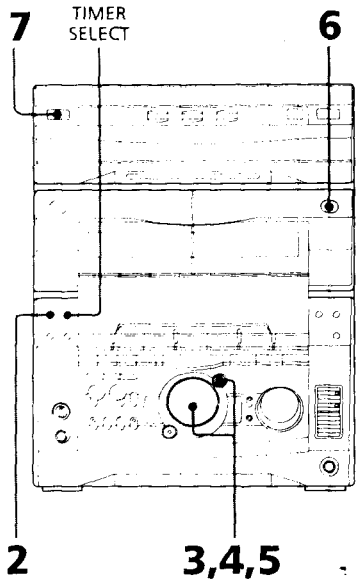
Press TIMER SELECT and turn the jog dial to select "TIMER OFF", then press ENTER/NEXT.

Tip

The power turns on 15 seconds before the preset time.

Timer-recording radio programs

To timer-record, you must preset the radio station (see "Step 4: Presetting radio stations") and set the clock (see "Step 3: Setting the time") beforehand.

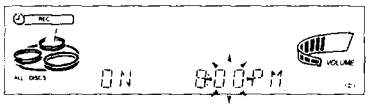


1 Tune in the preset radio station (see "Listening to the radio").

2 Press CLOCK/TIMER SET.
"SET (DAILY 1)" appears.

3 Turn jog dial to select REC, then press ENTER/NEXT.
"ON" appears and the hour digits flash in the display.

4 Set the time to start recording.
Turn the jog dial to set the hour, then press ENTER/NEXT.
The minute indication starts flashing.



Turn the jog dial to set the minute, then press ENTER/NEXT.
The hour indication flashes again.

5 Set the time to stop recording following the above procedure.
The start time appears, followed by the stop time, the preset radio station to be recorded (e.g., "TUNER FM 5"), then the original display appears.

6 Insert a recordable tape.

7 Turn off the power.
When the recording starts, the volume level is set to the minimum.

To check the setting

Press TIMER SELECT and turn the jog dial to select "REC", then press ENTER/NEXT.

To change the setting, start over from step 1.

To cancel the timer operation

Press TIMER SELECT and turn the jog dial to select "TIMER OFF", then press ENTER/NEXT.

Note

If the power is on at the preset time, the recording will not be made.

Additional Information

Precautions

On operating voltage

Before operating the system, check that the operating voltage of your system is identical with the voltage of your local power supply.

On safety

- The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.
- Unplug the system from the wall outlet (mains) if it is not to be used for an extended period of time. To disconnect the cord (mains lead), pull it out by the plug. Never pull the cord itself.
- Should any solid object or liquid fall into the component, unplug the stereo system and have the component checked by qualified personnel before operating it any further.
- The AC power cord must be changed only at the qualified service shop.

On placement

- Place the stereo system in a location with adequate ventilation to prevent heat build-up in the stereo system.
- Do not place the unit in an inclined position.
- Do not place the unit in locations where it is;
  - — Extremely hot or cold
  - — Dusty or dirty
  - — Very humid
  - — Vibrating
  - — Subject to direct sunlight

On operation

- If the stereo system is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lens inside the CD player. Should this occur, the system will not operate properly. Remove the CD and leave the system turned on for about an hour until the moisture evaporates.
- When you move the system, take out any discs.

If you have any questions or problems concerning your stereo system, please consult your nearest Sony dealer.

Notes on CDs

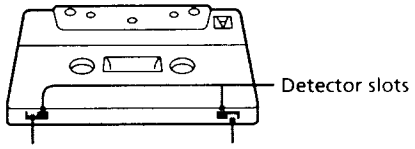
- Before playing, clean the CD with a cleaning cloth. Wipe the CD from the center out.
- Do not use solvents such as benzene, thinner, commercially available cleaners or anti-static spray intended for vinyl LPs.
- Do not expose the CD to direct sunlight or heat sources such as hot air ducts, nor leave it in a car parked in direct sunlight.

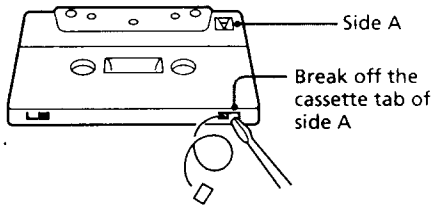
Cleaning the cabinet

Use a soft cloth slightly moistened with mild detergent solution.

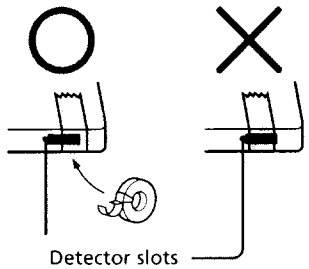
To save a tape permanently

To prevent a tape from being accidentally recorded over, break off the cassette tab from side A or B as illustrated.





If you later want to reuse the tape for recording, cover the broken tab with adhesive tape. However, be careful not to cover the detector slots which allow the tape player to automatically detect the type of tape.



continued

Before placing a cassette in the tape deck

Take up any slack in the tape. Otherwise the tape may get entangled in the parts of the tape deck and become damaged.

When using a tape longer than 90 minutes

The tape is very elastic. Do not change the tape operations such as play, stop, and fast-winding etc. frequently. The tape may get entangled in the tape deck.

Cleaning the tape heads

Clean the tape heads after every 10 hours of use. When the tape heads become dirty;

— the sound is distorted
— there is a decrease in sound level
— the sound drops out
— the tape does not erase completely
— the tape does not record

Make sure to clean the tape heads before you start an important recording or after playing an old tape. Use separately sold dry-type or wet-type cleaning cassette. For details, refer to the instructions of the cleaning cassette.

Demagnetizing the tape heads

Demagnetize the tape heads and the metal parts that have contact with the tape every 20 to 30 hours of use with a separately sold demagnetizing cassette. For details, refer to the instructions of the demagnetizing cassette.

Troubleshooting

If you run into any problem using this stereo system, use the following check list.

First, check that the power cord is connected firmly and the speakers are connected correctly and firmly.

Should any problem persist, consult your nearest Sony dealer.

General

The display starts flashing as soon as you plug in the power cord even though you haven't turned on the power (demonstration mode).

- Press DEMO when the power is turned off.

  The demonstration mode appears automatically the first time you plug in the power cord. If there is a power outage lasting longer than half a day, redo the following:

  — Clock setting (see "Step 3: Setting the time")
  — Preset stations (see "Step 4: Presetting radio stations")
  — Timer settings (see "Waking up to music" and "Timer-recording radio programs").

There is no sound.

- Rotate VOLUME clockwise.
- The headphones are connected.
- Insert only the stripped portion of the speaker cord into the SPEAKER jack. Inserting the vinyl portion of the speaker cord will obstruct the speaker connections.

There is severe hum or noise.

- A TV or VCR is placed too close to the stereo system. Move the stereo system away from the TV or VCR.

The sound from the connected source is distorted.

- If "VIDEO" appears in the display when you press FUNCTION, switch the display to "MD".

"0:00" (or "12:00") flashes in the display.

- A power interruption occurred. Set the clock and timer settings again.

The timer does not function.

- Set the clock correctly.

DAILY 1, DAILY 2, and REC do not appear when you press the TIMER SELECT button.

- Set the timer correctly.
- Set the clock.

The remote does not function.

- There is an obstacle between the remote and the system.
- The remote is not pointing in the direction of the system's sensor.
- The batteries have run down. Replace the batteries.

There is acoustic feedback.

- Decrease the volume level.
- Move the microphone away form the speakers or change the direction of the microphone.

The color irregularity on a TV screen persists.

- Turn off the TV set once, then turn it on after 15 to 30 minutes. If the color irregularity still persists, place the speakers farther away from the TV set.

Speakers

Sound comes from one channel or unbalanced left and right volume.

- Check the speaker connection and speaker placement.

The sound comes from the center speaker only.

- The source being played back is monaural. Press PRO LOGIC to turn off the Pro Logic mode.

There is no sound from the center speaker.

- Set the CENTER LEVEL to the appropriate level.

There is no sound from the rear speakers.

- Set the REAR LEVEL to the appropriate level.
- The software being played back has limited sound effects. Check the volume with the test tone.

Sound lacks bass.

- Check that the speaker's + and – jacks are connected correctly.

CD Player

The CD tray does not close.

- The CD is not placed properly.

The CD will not play.

- The CD is not lying flat in the disc tray.
- The CD is dirty.
- The CD is inserted label side down.
- Moisture condensation has built up. Remove the CD and leave the system turned on for about an hour until the moisture evaporates.

Play does not start from the first track.

- The player is in program or shuffle mode. Press PLAY MODE repeatedly until "PROGRAM" or "SHUFFLE" disappear.

"OVER" is displayed.

- You have reached the end of the CD. Press and hold ◀◀ to return.

continued

Tape Deck

The tape does not record.

- No tape in the cassette holder.
- The tab has been removed from the cassette (see "To save a tape permanently" on page 49).
- The tape has reeled to the end.

The tape does not record nor play or there is a decrease in sound level.

- The heads are dirty. Clean them (see "Cleaning the tape heads" on page 50).
- The record/playback heads are magnetized. Demagnetize them (see "Demagnetizing the tape heads" on page 50).

The tape does not erase completely.

- The record/playback heads are magnetized. Demagnetize them (see "Demagnetizing the tape heads" on page 50).

There is excessive wow or flutter, or the sound drops out.

- The capstans or pinch rollers are dirty. Clean them (see "Cleaning the tape heads" on page 50).

Noise increases or the high frequencies are erased.

- The record/playback heads are magnetized. Demagnetize them (see "Demagnetizing the tape heads" on page 50).

After pressing ► (◄) or ⏏, there is a mechanical noise, "EJECT" appears in the display, and the unit enters standby mode automatically.

- The cassette tape was not inserted correctly. Eject the tape and turn the power back on.

Tuner

Severe hum or noise ("TUNED" or "STEREO" flashes in the display).

- Adjust the antenna.
- The signal strength is too weak. Connect the external antenna.

A stereo FM program cannot be received in stereo.

- Press STEREO/MONO so that "STEREO" appears.

If other troubles not described above occur, reset the system as follows:

1 Unplug the power cord.
2 Plug the power cord back in.
3 Press ■, ENTER/NEXT, and DISC 1 at the same time.
4 Press I/⏻ to turn on the power.

Specifications

Amplifier section

MHC-RX110AV (Canadian models):

Front Speaker:

Continuous RMS power output (reference)
120 + 120 watts
(8 ohms at 1 kHz,
10% THD)

Total harmonic distortion less than 0.07%
(8 ohms at 1 kHz, 65 W)

Center Surround Speaker:

Continuous RMS power output (reference)
25 watts
(8 ohms at 1 kHz,
10% THD)

Rear Surround Speaker:

Continuous RMS power output (reference)
12.5 + 12.5 watts
(16 ohms at 1 kHz,
10% THD)

MHC-RX110AV (European and Russian models):

Front Speaker:

DIN power output (rated) 80 + 80 watts
(8 ohms at 1 kHz, DIN)

Continuous RMS power output (reference)
100 + 100 watts
(8 ohms at 1 kHz,
10% THD)

Music power output (reference)
170 + 170 watts
(8 ohms at 1 kHz,
10% THD)

Center Surround Speaker:

DIN power output (rated) 20 watts
(8 ohms at 1 kHz, DIN)

Continuous RMS power output (reference)
25 watts
(8 ohms at 1 kHz,
10% THD)

Music power output (reference)
45 watts
(8 ohms at 1 kHz,
10% THD)

Rear Surround Speaker:

DIN power output (rated) 10 + 10 watts
(16 ohms at 1 kHz, DIN)

Continuous RMS power output (reference)
12.5 + 12.5 watts
(16 ohms at 1 kHz,
10% THD)

Music power output (reference)
20 + 20 watts
(16 ohms at 1 kHz,
10% THD)

MHC-GRX10AV (Other models):

The following measured at AC 120, 220, 240 V
50/60 Hz

Front Speaker:

DIN power output (rated) 105 + 105 watts
(6 ohms at 1 kHz, DIN)

Continuous RMS power output (reference)
130 + 130 watts
(6 ohms at 1 kHz,
10% THD)

Center Surround Speaker:

DIN power output (rated) 20 watts
(8 ohms at 1 kHz, DIN)

Continuous RMS power output (reference)
25 watts
(8 ohms at 1 kHz,
10% THD)

Rear Surround Speaker:

DIN power output (rated) 10 + 10 watts
(16 ohms at 1 kHz, DIN)

Continuous RMS power output (reference)
12.5 + 12.5 watts
(16 ohms at 1 kHz,
10% THD)

Peak music power output (reference)
2000 watts

Inputs

VIDEO IN:	voltage 250 mV,
(phono jacks)	impedance 47 kilohms
MD IN:	voltage 450 mV,
(phono jacks)	impedance 47 kilohms
MIX MIC: (phone jack)	sensitivity 1 mV, impedance 10 kilohms

Outputs

MD OUT:	voltage 250 mV
(phono jacks)	impedance 1 kilohms
PHONES:	accepts headphones of 8
(stereo phone jack)	ohms or more
FRONT SPEAKER:	accepts impedance of 8 to 16 ohms
REAR SURROUND SPEAKER:	accepts impedance of 16 ohms
CENTER SURROUND SPEAKER:	accepts impedance of 8 ohms
SUPER WOOFER:	Voltage 1 V, impedance 1 kilohms

continued

Specifications (continued)

CD player section

System	Compact disc and digital audio system
Laser	Semiconductor laser (λ=780nm) Emission duration: continuous
Laser output	Max. 44.6 μW* *This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.
Frequency response	2 Hz – 20 kHz (±0.5 dB)
Wavelength	780 – 790 nm
Signal-to-noise ratio	More than 90 dB
Dynamic range	More than 90 dB
CD OPTICAL DIGITAL OUT (Square optical connector jack, rear panel)	
Wavelength	600 nm
Output Level	–18 dBm

Tape player section

Recording system	4-track 2-channel stereo
Frequency response (DOLBY NR OFF)	60 – 13,000 Hz (±3 dB), using Sony TYPE I cassette 60 – 14,000 Hz (±3 dB), using Sony TYPE II cassette
Wow and flutter	±0.15% W.Peak (IEC) 0.1% W.RMS (NAB) ±0.2% W.Peak (DIN)

Tuner section

FM stereo, FM / AM superheterodyne tuner

FM tuner section

Tuning range	
2 band models:	87.5 – 108.0 MHz
3 band (FM–MW–SW) models:	87.5 – 108.0 MHz
3 band (FM–MW–LW) models:	87.5 – 108.0 MHz
4 band models:	87.5 – 108.0 MHz
Antenna	FM lead antenna
Antenna terminals	75 ohm unbalanced
Intermediate frequency	10.7 MHz

UKV tuner section (4 band model only)

Tuning range	65.0 – 74.0 MHz Stereo Plus

AM tuner section

Tuning range	
2 Band type:	
North American models:	530 – 1,710 kHz (with the interval set at 10 kHz) 531 – 1,710 kHz (with the interval set at 9 kHz)
Other models:	531 – 1,602 kHz (with the interval set at 9 kHz) 530 – 1,710 kHz (with the interval set at 10 kHz)
3 Band / 4 Band type:	
European and Russian models:	
MW:	531 – 1,602 kHz (with the interval set at 9 kHz)
LW:	153 – 279 kHz (with the interval set at 3 kHz)
Middle Eastern models:	
MW:	531 – 1,602 kHz (with the interval set at 9 kHz)
SW:	5.95 – 17.90 MHz (with the interval set at 5 kHz)
Other models:	
MW:	531 – 1,602 kHz (with the interval set at 9 kHz) 530 – 1,710 kHz (with the interval set at 10 kHz)
SW:	5.95 – 17.90 MHz (with the interval set at 5 kHz)
Antenna	AM loop antenna
Antenna terminals	External antenna terminal
Intermediate frequency	450 kHz

Speaker

Front Speaker
SS-RX110 for North American models
SS-RX88 for European and Russian models
SS-GRX10A for Australian models

Speaker system	3-way, bass-reflex type magnetically shielded type
Speaker units	
Woofer:	17 cm, cone type
Tweeter:	5 cm, cone type
Super Tweeter:	2 cm, dome type
Nominal impedance	
SS-RX110, SS-RX88:	8 ohms
SS-GRX10A:	6 ohms
Dimensions (w/h/d)	Approx. 230 x 365 x 325 mm
Mass	Approx. 5 kg net per speaker

SS-GRX10 for other models

Speaker system	4-way, 5-unit, bass-reflex type magnetically shielded type
Speaker units	
Woofer:	17 cm, cone type
Center Tweeter:	5 cm, cone type
Side Tweeter:	5 cm, cone type x 2
Super Tweeter:	2 cm, dome type
Nominal impedance:	6 ohms
Dimensions (w/h/d)	Approx. 230 x 365 x 320 mm
Mass	Approx. 5.5 kg net per speaker

Rear Surround Speaker (SS-SR110)

Speaker system	1-way, 1-unit, bass-reflex type
Speaker units	
Full-range:	8 cm, cone type
Nominal impedance	16 ohms
Dimensions (w/h/d)	Approx. 230 x 85 x 215 mm
Mass	Approx. 1.0 kg net per speaker

Center Surround Speaker (SS-CN110)

Speaker system	1-way, 1-unit, bass-reflex type magnetically shielded
Speaker units	
Full-range:	8 cm, cone type
Nominal impedance	8 ohms
Dimensions (w/h/d)	Approx. 280 x 110 x 170 mm
Mass	Approx. 1.5 kg net

For customers in Canada

Use only the supplied SS-SR110 rear surround speaker for connection to the REAR SURROUND SPEAKER connector, the supplied SS-CN110 center surround speaker for connection to the CENTER SURROUND SPEAKER connector on the MHC-RX110AV.

General

Power requirements	
North American models:	120 V AC, 60 Hz
European and Russian models:	230 V AC, 50/60 Hz
Other models:	120 V, 220 V or 230 - 240 V AC, 50/60 Hz Adjustable with voltage selector
Power consumption	
North American models:	210 VA
European and Russian models:	240 watts
Other models:	290 watts
Dimensions (w/h/d)	Approx. 280 x 365 x 405. mm
Mass	
North American models:	Approx. 10.7 kg
European and Russian models:	Approx. 10.8 kg
Other models:	Approx. 11.9 kg
Supplied accessories:	AM loop antenna (1) Remote RM-SR9AV (1) Batteries (2) FM lead antenna (1) Speaker cords (5) Front speaker pads (8) Center speaker pads (4)

Design and specifications are subject to change without notice.

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